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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant : Mercy M. Davidson
Serial No. : 09/604,876 Examiner: R. Schnizer
Filed : June 28, 2000 Group Art Unit: 1635
For : IMMORTALIZATION OF HUMAN POST-MITOTIC CELLS

1185 Avenue of the Americas
New York, New York 10036
December 24, 2003

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

In accordance with the duty of disclosure under 37 C.F.R. §1.56, applicant would like to direct the Examiner's attention to the following disclosures, which are listed on Form PTO-1449 (**Exhibit A**). Copies of the disclosures listed below as items 1-45 are attached hereto as **Exhibits 1-45**, respectively.

1. Bader, D., et al., "Immunochemical analysis of myosin heavy chain during avian myogenesis *in vivo* and *in vitro*." J. Cell. Biol., 95:763-770 (1982) (**Exhibit 1**);
2. Bloch, K.D., et al., "Neonatal atria and ventricles secrete atrial natriuretic factors via tissue-specific secretory pathways." Cell, 47:695-702 (1986) (**Exhibit 2**);

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3. Brunskill, E.W., et al., "Novel cell lines promote the discovery of genes involved in early heart development." Dev. Biol., 235:507-520 (2001) (**Exhibit 3**);
4. Campion, D.R., "The muscle satellite cell: a review." Int. Rev. Cytol., 87:225-51 (1984) (**Exhibit 4**);
5. Cantin, M., et al., "The heart as an endocrine gland." J. Hypertens., 2 (Suppl. 3):329-331 (1984) (**Exhibit 5**);
6. Chiu, R.C., et al., "Cellular cardiomyoplasty: myocardial regeneration with satellite cell implantation." Ann. Thorac. Surg., 60:12-18 (1995) (**Exhibit 6**);
7. Claycomb, W.C., "Atrial-natriuretic-factor mRNA is developmentally regulated in heart ventricles and actively expressed in cultured ventricular cardiac muscle cells of rat and human." Biochem. J., 255:617-620 (1988) (**Exhibit 7**);
8. Claycomb, W.C., et al., "Culture of the terminally differentiated adult cardiac muscle cell: a light and scanning electron microscope study." Dev. Biol., 80:466-482 (1980) (**Exhibit 8**);

9. Constantin, B., et al., "Involvement of gap junctional communication in myogenesis." Int. Rev. Cytol., 196:1-65 (2000) (**Exhibit 9**);
10. de Bold, A.J., "Atrial natriuretic factor: a hormone produced by the heart." Science, 230:767-770 (1985) (**Exhibit 10**);
11. Delorme, B., et al., "Expression pattern of connexin gene products at the early developmental stages of the mouse cardiovascular system." Circ. Res., 81:423-437 (1997) (**Exhibit 11**);
12. Doevendans, P.A., et al., "Differentiation of cardiomyocytes in floating embryoid bodies is comparable to fetal cardiomyocytes." J. Mol. Cell. Cardiol., 32:839-851 (2000) (**Exhibit 12**);
13. Eppenberger-Eberhardt, M., et al., "New occurrence of atrial natriuretic factor and storage in secretorially active granules in adult rat ventricular cardiomyocytes in long-term culture." J. Mol. Cell. Cardiol., 25:753-757 (1993) (**Exhibit 13**);
14. Eppenberger-Eberhardt, M., et al., "Reexpression of α -smooth muscle actin isoform in cultured adult rat cardiomyocytes." Dev. Biol., 139:269-278 (1990) (**Exhibit 14**);

15. Fabrizi, G.M., et al., "Differential expression of genes specifying two isoforms of subunits VIa of human cytochrome c oxidase." Gene, 119:307-312 (1992) (**Exhibit 15**);
16. Franke, W.W., et al., "Specific immunohistochemical detection of cardiac/fetal α -actin in human cardiomyocytes and regenerating skeletal muscle cells." Differentiation, 60:245-250 (1996) (**Exhibit 16**);
17. Fürst, D.O., et al., "Myogenesis in the mouse embryo: differential onset of expression of myogenic proteins and the involvement of titin in myofibril assembly." J. Cell. Biol., 109:517-527 (1989) (**Exhibit 17**);
18. Goldman, B.I., et al., "Human fetal cardiocytes in enriched culture." In Vitro Cell. Dev. Biol. Anim., 31:731-734 (1995) (**Exhibit 18**);
19. Graef, I.A., et al., "NFAT signaling in vertebrate development." Curr. Opin. Genet. Dev., 11:505-512 (2001) (**Exhibit 19**);
20. Hescheler, J., et al., "Establishment of ionic channels and signaling cascades in the embryonic stem cell-derived primitive endoderm and cardiovascular system." Cells Tissues Organs, 165:153-164 (1999) (**Exhibit 20**);

21. Horsley, V., et al., "NFAT: ubiquitous regulator of cell differentiation and adaptation." J. Cell. Biol., 156(5):771-4 (2002) (**Exhibit 21**);
22. Jaenicke, T., et al., "The complete sequence of the human β -myosin heavy chain gene and a comparative analysis of its product." Genomics, 8:194-206 (1990) (**Exhibit 22**);
23. Jaffredo, T., et al., "MC29-immortalized clonal avian heart cell lines can partial differentiate in vitro." Exp. Cell Res., 192:481-491 (1991) (**Exhibit 23**);
24. Janssen, P.M., et al., "Preservation of contractile characteristics of human myocardium in multi-day cell culture." J. Mol. Cell. Cardiol., 31:1419-1427 (1999) (**Exhibit 24**);
25. Katz, E.B., et al., "Cardiomyocyte proliferation in mice expressing α -cardiac myosin heavy chain-SV40 T-antigen transgenes." Am. J. Physiol., 262:H1867-H1876 (1992) (**Exhibit 25**);
26. Koga, Y., et al., "Sequence of a cDNA specifying subunit VIIc of human cytochrome c oxidase." Nucleic Acids Res., 18(3):684 (1990) (**Exhibit 26**);

27. Li, R., et al., "Human pediatric and adult ventricular cardiomyocytes in culture: assessment of phenotypic changes with passaging." Cardiovasc. Res., 32:362-373 (1996) (**Exhibit 27**);
28. Litzkas, P., et al., "Efficient transfer of cloned DNA into human diploid cells: protoplast fusion in suspension." Mol. Cell. Biol., 4(11):2549-2552 (1984) (**Exhibit 28**);
29. Lloyd, T.R., et al., "Sympathetic innervation improves the contractile performance of neonatal cardiac ventricular myocytes in culture." J. Mol. Cell. Cardiol., 22:333-342 (1990) (**Exhibit 29**);
30. Lyons, G.E., et al., "Developmental regulation of myosin gene expression in mouse cardiac muscle." J. Cell. Biol., 111:2427-2436 (1990) (**Exhibit 30**);
31. Lyons, G.E., et al., "The expression of myosin genes in developing skeletal muscle in the mouse embryo." J. Cell. Biol., 111:1465-1476 (1990) (**Exhibit 31**);
32. Marvin, W.J., Jr., et al., "Correlation of function and morphology of neonatal rat and embryonic chick cultured cardiac and vascular muscle cells." Circ. Res., 45:528-540 (1979) (**Exhibit 32**);

33. Molkenstin, J.D., "The zinc finger-containing transcription factors GATA-4, -5, and -6. Ubiquitously expressed regulators of tissue-specific gene expression." J. Biol. Chem., 275:38949-52 (2000) (**Exhibit 33**);
34. Murry, C.E., et al., "Skeletal myoblast transplantation for repair of myocardial necrosis." J. Clin. Invest., 98(11):2512-2523 (1996) (**Exhibit 34**);
35. Negishi, Y., et al., "Multipotency of a bone marrow stromal cell line, TBR31-2, established from ts-SV40 T antigen gene transgenic mice." Biochem. Biophys. Res. Commun., 268:450-455 (2000) (**Exhibit 35**);
36. Polinger, I.S., "Separation of cell types in embryonic heart cell cultures." Exp. Cell. Res., 63:78-82 (1970) (**Exhibit 36**);
37. Protas, L., et al., "L-type but not T-type calcium current changes during postnatal development in rabbit sinoatrial node." Am. J. Physiol. Heart Circ. Physiol., 281:H1252-H1259 (2001) (**Exhibit 37**);
38. Quaini, F., et al., "Chimerism of the transplanted heart." N. Engl. J. Med., 346:5-15 (2002) (**Exhibit 38**);

39. Salviati, L., et al., "Copper supplementation restores cytochrome c oxidase activity in cultured cells from patients with SC02 mutations." Biochem. J., 363:321-327 (2002) (**Exhibit 39**);
40. Schultheiss, T., et al., "Desmin/vimentin intermediate filaments are dispensable for many aspects of myogenesis." J. Cell. Biol., 114:953-966 (1991) (**Exhibit 40**);
41. Severs, N.J., "The cardiac muscle cell." BioEssays, 22:188-199 (2000) (**Exhibit 41**);
42. Spurr, A.R., "A low-viscosity epoxy resin embedding medium for electron microscopy." J. Ultrastruct. Res., 26:31-43 (1969) (**Exhibit 42**);
43. Steinhilper, M.E., et al., "Proliferation in vivo and in culture of differentiated adult atrial cardiomyocytes from transgenic mice." Am. J. Physiol., 259 (Heart Circ. Physiol. 28):H1826-H1834 (1990) (**Exhibit 43**);
44. Van Kempen, M.J.A., et al., "Developmental changes of connexin40 and connexin43 mRNA distribution patterns in the rat heart." Cardiovasc. Res., 32:886-900 (1996) (**Exhibit 44**); and

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Page 9

45. Wang, D., et al., "Activation of cardiac gene expression by myocardin, a transcriptional cofactor for serum response factor." Cell, 105(7):851-62 (2001) (**Exhibit 45**).

Pursuant to 37 C.F.R. §1.97(c)(2), the required fee for filing this Supplemental Information Disclosure Statement is ONE-HUNDRED AND EIGHTY DOLLARS (\$180.00), and a check including this amount is enclosed.

If a telephone conference would be of assistance in advancing prosecution of the subject application, applicant's undersigned attorney invites the Examiner to telephone him at the number provided below.

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Serial No.: 09/604,876
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Page 10

No fee, other than the enclosed \$180.00 fee for filing a Supplemental Information Disclosure Statement, is deemed necessary in connection with the filing of this Supplemental Information Disclosure Statement. However, if any additional fee is required, authorization is hereby given to charge the amount of such fee to Deposit Account No. 03-3125.

Respectfully submitted,

John P. White
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Alan J. Morrison
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I hereby certify that this correspondence is being deposited this date with the U.S. Postal Service with sufficient postage as first class mail in an envelope addressed to:
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Alan J. Morrison
Reg. No. 37,399

Date

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INFORMATION DISCLOSURE STATEMENT

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U.S. PATENT DOCUMENTS

Initial	Document Number	Date	Name	Class	Subclass	Filing Date if Appropriate

FOREIGN PATENT DOCUMENTS

Document Number	Date	Country	Class	Subclass	Translation	
					Yes	No

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	Bader, D., et al., "Immunochemical analysis of myosin heavy chain during avian myogenesis <i>in vivo</i> and <i>in vitro</i> ." <u>J. Cell. Biol.</u> , 95:763-770 (1982) (Exhibit 1);
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Exhibit A

Form PTO-1449

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